

MEMORANDUM

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DATE: September 19, 1996

SUBJ: Evaluation of Carolina Plating Works' status under the
RCRIS Corrective Action Environmental Indicator Event
Codes (CA725 and CA750)
SCD 003 351 996

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of Carolina Plating Works, Inc. status in relation to the following RCRIS corrective action codes:

- 1) Human Exposures Controlled Determination (CA725),
- 2) Groundwater Releases Controlled Determination (CA750).

The applicability of these event codes adheres to the definitions and guidance provided by the Office of Solid Waste (OSW), United States Environmental Protection Agency (EPA), Washington, DC in the July 29, 1994, memorandum to the EPA Regional Waste Management Division Directors.

In January 1995, the State of South Carolina became authorized to implement those portions of the Resource Conservation and Recovery Act (RCRA) of 1976 covered under the

1984 Hazardous and Solid Waste Amendments (HSWA). The recommendations provided in this document have been generated through the use of EPA's current Environmental Indicator ranking system.

II. HUMAN EXPOSURES CONTROLLED DETERMINATION (CA725)

There are three (3) national status codes under CA725. These status codes are:

- 1) YE Yes, applicable as of this date.
- 2) NA Previous determination no longer applicable as of this data.
- 3) NC No control measures necessary.

South Carolina Department of Health and Environmental Control (SCDHEC), in conjunction with EPA Region IV, has also added a regional status code to CA725 which tracks initial evaluations in which a determination is made that plausible human exposures to current contamination risks are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable during the first CA725 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NC) to explain the current status of exposure controls.

Note that the three national status codes for CA725 are based on the entire facility (i.e., the codes are not SWMU specific). Therefore, every area at the facility must meet the definition before a YE, NA or NC status code can be entered for CA725. Similarly, the regional status code, NO, is applicable if plausible human exposures are not controlled in any areas of the facility.

This particular CA725 evaluation is the first evaluation performed by SCDHEC for Carolina Plating Works, Inc. Because assumptions have to be made as to whether or not human exposures to current media contamination are plausible and, if plausible, whether or not controls are in place to address these plausible exposures, this memo first examines each environmental media (i.e., soil, groundwater, surface water, air) at the entire facility including any offsite contamination emanating from the

facility rather than from individual areas or releases. After this independent media by media examination is presented, a final recommendation is offered as to the proper CA725 status code for Carolina Plating Works, Inc.

The following discussions, interpretations and conclusions on contamination and exposures at the facility are based on the following reference documents:

RCRA Facility Investigation Report, Volume 1&2, dated July 23, 1996

RCRA Postclosure Care Part A and B Permit Renewal Applications, dated April 18, 1995

Hazardous Waste Permit SCD 003 351 996

Quarterly and Annual Groundwater Corrective Action Reports

III. MEDIA BY MEDIA DISCUSSION OF CONTAMINATION AND THE STATUS OF PLAUSIBLE HUMAN EXPOSURES

GROUNDWATER is contaminated onsite and has migrated offsite, however, plausible human exposures are controlled by the facility's groundwater corrective action system.

Groundwater has been contaminated at concentrations above the Federal Drinking Water Standards by releases from one former surface impoundment which was certified closed under RCRA on March 12, 1987. A RCRA Hazardous Waste Permit was issued and became effective on October 15, 1990 for postclosure care of this former surface impoundment. Carolina Plating Works, Inc. submitted an application for permit renewal on April 18, 1995.

Two releases from the old wastewater treatment system may have contributed to the groundwater contamination. In 1986 a release from the old wastewater pretreatment system migrated offsite to a marshy area between the C&N and Southern Railroad and Western Carolina Regional Sewer Authority's right of way. In 1987 approximately 1,000 gallons of plating wastewater were released from a new pretreatment holding tank and migrated offsite into the same location as the 1986 release. Contaminated soils were removed following each release. The 1986 release has

been designated as solid waste management unit (SWMU) #6 while the 1987 release has been designated as SWMU #7.

Aquifers: The uppermost aquifer extends through the saprolite/bedrock interface zone to the igneous/metamorphic bedrock fracture system. There are three fracture zones within the igneous/metamorphic bedrock aquifer system: shallow, medium, and deep fracture zones. Normally, static water elevations persist across the site causing lateral migration with no significant vertical component of flow.

Drinking Water Wells: There are no known public or private water supply wells located within a one mile radius of CPW.

Constituents of Concern: Volatile organic compounds, barium, cadmium, and chromium.

Corrective Action: CPW began groundwater corrective action (pump and treat) for the former surface impoundment in September 1991 by extracting contaminated groundwater from recovery well RW-1 at a rate of 2 gallons per minute (gpm). This rate was increased to 5 gpm in April 1994. In January 1994 a second recovery well, RW-2, was installed and the rate of groundwater recovery is approximately 5 gpm from this well. According to a June 1994 contaminant transport model, the facility's known groundwater contaminant plume could be captured if RW-1 yields 5 gpm while RW-2 yields 6 gpm. The model predicts that the entire groundwater contaminant plume can be remediated within seven and one-half years from that time.

In response to corrective action, the concentrations of total volatile organic compounds (VOCs) in groundwater have been reduced. Total VOC concentrations range from below detection limit to less than 300 parts per billion (ppb). Barium concentrations hover around background values, while cadmium was detected during one recent sampling event at a concentration of 63.5 parts per million (ppm). Chromium has been detected at 7.94 ppm.

The implemented final remedy of pump and treat has resulted in the control of plausible human exposures. The permit specifies the facility's Groundwater Protection Standard which is attached.

SURFACE WATER is not contaminated or is reasonably expected not to be contaminated at this time. Langston Creek is to the southwest of the facility and surface water samples collected in the past have not detected elevated concentrations of constituents of concern. Because contamination is not reasonably expected, there are no plausible human exposures which must be controlled due to contaminated surface water.

SOIL The facility's 1990 RCRA Hazardous Waste Permit required the investigation of soils at solid waste management unit (SWMU) #2, Old Wastewater Treatment System, and area of concern (AOC) A which consists of SWMUs #6 & #7. SWMU #8, Yellow Discharge Along Building Annex, was identified during an onsite hazardous waste inspection in December 1992 and was included in the RFI process.

Soil at the facility is contaminated when compared to the Soil Screening Levels (SSL) for arsenic, barium, and nickel, and the Soil Ingestion Residential values for cadmium and acetone, which are included in the EPA Region III Risk-Based Concentrations, dated April 19, 1996. However, natural background concentrations for arsenic and barium are reported as elevated when compared to the established SSL. Also, the concentration values for total cyanide in soils are elevated when compared to natural background concentrations and no differentiation in the type of cyanide has been made. Cyanide is a constituent of concern in that CPW's former process included a cyanide line.

Soil is contaminated onsite and offsite and there are some plausible onsite and offsite human exposures to this contamination. For example, SWMU #6 and SWMU #7 extend offsite to an area across the C&N and Southern Railroad for which offsite access has been denied. Therefore, the RFI investigation of these SWMUs was conducted solely onsite and does not portray the extent of contamination. Furthermore, SWMUs #6 and #7 are crossed by an industrial public access road. Exposure to contaminated soils is plausible but not probable.

AIR Releases to air from soil, groundwater and/or surface water contaminated by SWMUs and/or AOCs at the facility are not expected to be occurring above relevant action levels.

Therefore, there is no human exposure to contamination via an air route.

IV. STATUS CODE RECOMMENDATION FOR CA725:

Human exposures to contamination are not currently controlled for soil, it is recommended that CA725 NO - plausible human exposures are present but not controlled - be entered into RCRIS.

V. GROUNDWATER RELEASES CONTROLLED DETERMINATION (CA750)

There are three (3) status codes listed under CA750:

- 1) YE Yes, applicable as of this date.
- 2) NA Previous determination no longer applicable as of this date.
- 3) NR No releases to groundwater.

South Carolina Department of Health and Environmental Control (SCDHEC), in conjunction with EPA Region IV, has also added an additional status code which tracks the initial evaluations in which a determination is made that groundwater releases are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable in the first CA750 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NR) to explain the current status of groundwater control.

Note that the three national status codes for CA750 are designed to measure the adequacy of actively or passively controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels. The point where the success or failure of controlling the migration of hazardous constituents is measured is termed the designated boundary (e.g., the facility boundary, a line upgradient of receptors, the leading edge of the plume as defined by levels above action levels or cleanup standards, etc.). Therefore, every contaminated area at the facility must meet the definition before these event/status codes can be entered. Similarly, the regional status code is applicable if contaminated groundwater is not controlled in any area(s) of the facility.

This evaluation for CA750 is the first formal evaluation performed by SCDHEC for Carolina Plating Works, Inc. Please note that CA750 is based on the adequate control of all contaminated groundwater at the facility.

The following discussions, interpretations, and conclusions

on contaminated groundwater at the facility are based on the documents referenced above.

VI. STATUS CODE RECOMMENDATION FOR CA750:

Groundwater contamination is discussed in Section II above. According to the facility's January 1994 contaminant transport model, hydraulic control of onsite contamination is achieved by means of recovery well RW-1 and RW-2. However, contaminated groundwater has migrated offsite and the model predicts that known groundwater contamination will be remediated within seven and one-half years by the present system and natural migration. CPW has been unable to determine the horizontal extent of groundwater contamination due to continued refusal of access by property owner(s).

It is recommended that CA750 NO - a release to groundwater has occurred and the releases are not controlled - be entered into RCRIS.

JCO/jco

cc: Docket File

CAROLINA PLATING WORKS, INC.
SCD 003 351 996
GREENVILLE COUNTY

GROUNDWATER PROTECTION STANDARD

<u>Parameter</u>	<u>Concentration Limit</u>
Barium	1.0 part per million (ppm) *
Cadmium	0.01 ppm*
Chromium	0.05 ppm*
Benzene	MDL**
Chloroethane	MDL**
Chloroform	MDL**
Carbon Tetrachloride	MDL**
Dichlorobromomethane	MDL**
Dichlorodifluoromethane	MDL**
1,1-dichloroethane	MDL**
1,2-dichloroethane	MDL**
Methyl Chloride	MDL**
Methylene Chloride	MDL**
Toluene	MDL**
1,1,1-trichloroethane	MDL**
Trichloroethene	MDL**

* Concentration Limit per R.61-79.264.94, Appendix D.

** Method Detection Limit

Concentration limits shall be background concentrations based on method detection limits as defined by the most recent issue of EPA publication SW-846, Test Methods for Evaluating Solid Waste.